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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,085	10/11/2005	Shintaro Okada	09792909-6376	4769

26263 7590 04/24/2009  
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EXAMINER

SHIKHMAN, MAX

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

04/24/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/553,085

**Applicant(s)**

OKADA ET AL.

**Examiner**

MAX SHIKHMAN

**Art Unit**

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### ***Response to Amendment***

1. Applicants' response to the last Office Action, filed 01/28/2009 has been entered and made of record.

### ***Response to Arguments***

2. Applicant's arguments and (Examiner's Reply).

Applicant argues: p6, the difference for either subtraction calculation is more than theta (threshold value), both pixels are not used in the average. In contrast, as claimed the neighbouring signals ( $w_{n-k}$ ,  $x_{n-k}$ ) for which the level difference is greater than the threshold ( $|x_n - x_{n-k}| > \varepsilon$ ) value are used in the weighted average (Formula1) but each of their level is replaced (Formula1: when  $|x_n - x_{n-k}| > \varepsilon$ ,  $w_{n-k} = x_n$ ) by that of the signal of attention. ( $x_n$ )

### ***Double Patenting***

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claim 1 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/805207.

Claim 4 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 4 of copending Application No. 10/805207.

Claim 5 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 10 of copending Application No. 10/805207.

Claim 6 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 11 of copending Application No. 10/805207.

Although the conflicting claims are not identical, they are not patentably distinct from each other because they disclose the same operation.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

#### ***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 4 is rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent<sup>1</sup> and recent Federal Circuit decisions<sup>2</sup> indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. Please amend, method comprising using a processor to perform the steps of:

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim **1,4,5,6; 2,3** rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya PG PUB-DOCUMENT-NUMBER: 20010038716 in view of Nakajima, PG PUB-DOCUMENT-NUMBER: 20040008902.

**( ) Regarding Claims 1,4,5,6:**

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<sup>1</sup> *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

<sup>2</sup> *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

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(Note: signal of attention= $x_n$ . predetermined threshold value= $\varepsilon$ . weight= $a_k$

predetermined neighbouring signals=[0032] Formula 1:  $w_{n-k}$ )

1. A signal processing apparatus for adjusting levels of continuously arranged signals, said signal processing apparatus comprising:

a designation unit (5) for designating the continuously arranged signals as a signal of attention ( $x_n$ ) one by one; (Formula 1: n)

a determination unit (5) for determining a predetermined number of signals preceding (Formula1:  $k=-N$ ) the signal of attention designated by the designation unit, and a predetermined number of signals following (Formula1: N) the signal of attention, to be predetermined neighbouring signals; (Formula1)

a weight average unit for averaging by weight ([0032]. Formula 1:  $a_k$ ) the signal of attention and the predetermined neighbouring signals; ([0032]. Formula 1:  $w_{n-k}$ )

flag setting unit for calculating a difference in levels between the signal of attention and a neighbouring signal, (Formula1:  $|x_n - x_{n-k}|$ )

judging whether or not the difference (Formula1:  $|x_n - x_{n-k}| > \varepsilon$ ) is larger than a predetermined threshold value, ( $\varepsilon$ ) and raising flags (output of 33) for the neighbouring signal<sup>1</sup> with respect to the signal of attention, when the difference is judged to be larger than the predetermined threshold value; and

([0032] Formula1: when  $|x_n - x_{n-k}| > \varepsilon$ ,  $w_{n-k} = x_n$ .)

a control unit (5) for controlling and causing the weighted average unit to average by weight, the signal of attention and the predetermined neighbouring signals, (Formula1) using the level of the signal of attention ( $x_n$ . Formula1: when  $|x_n - x_{n-k}| > \varepsilon$ ,  $w_{n-k} = x_n$ . [0034].) instead

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of the level of each of the neighbouring signals ([0034] "ignoring the pixel value  $x_{n-k}$ ") for which flags are raised. (output of 33)

*Tsuchiya discloses everything as described above except, <sup>1</sup>and another neighbouring signal, the two neighbouring signals arranged symmetrically.*

Nakajima discloses, another neighbouring signal, (Fig 1: h) *the two neighbouring signals arranged symmetrically.* (Fig 1: a and h are symmetric [0034])

flags are raised, (Fig1. If either  $|a-o| > \theta$  or  $|h-o| > \theta$ , flag raised for 2 pixels: a & h.)

[0033] "'1" is output from each comparator 11 when absolute values of differences between peripheral pixels and a watched pixel are smaller than the value of the reference level  $\theta$ ". Fig1, 11 outputs 1 when  $|a-o| < \theta$ . 11 outputs 0 if  $|a-o| > \theta$ . 12 does logical AND,  $|a-o| < \theta$  AND  $|h-o| < \theta$ . If either relationship is 0, 12 outputs 0. Since 12 receives inputs from a and h, the flag is raised for a and h. The flag is the output of 12. a and h are symmetrical in Fig 1. If 12 outputs 0, then 13 outputs 0 and adder 14 will not count 0. So, if either  $|a-o| > \theta$  or  $|h-o| > \theta$ , both are invalidated.

(Nakajima Fig1. If either  $|a-o| > \theta$  or  $|h-o| > \theta$ , 11 outputs 0, then 12 outputs 0, this is the flag. If 12 outputs 0, then 13 outputs 0 and adder 14 will not count 0. So, if either  $|a-o| > \theta$  or  $|h-o| > \theta$ , both are invalidated. o is the watched pixel. a and h are symmetric with respect to o.)

Nakajima, [0034] "'1" is output from the AND circuits 12 when both of absolute values of differences between level values of combined pixels and the watched pixel are smaller than the reference level".

Nakajima, [0042] "using only pixels which are both selected and thereby performing the averaging operation, an averaged signal phase is not deviated from the original position of the watched pixel and moreover, the possibility that generated image edges are disordered can be canceled."

As Nakajima discloses, both pixels symmetric about a watched pixel are subtracted from the watched pixel; if the difference for either subtraction calculation is more than  $\theta$ , both pixels are not used in the average; this allows for unchanging signal phase. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Nakajima's symmetric pixel differences in Tsuchiya's low pass filtering, to invalidate symmetric pixel pairs which deviate from the center pixel by more than a threshold, to maintain unchanging signal phase.

**() Regarding Claim 2:**

2. *The signal processing apparatus as described in claim 1, wherein said flag setting unit further raises a flag (Tsuchiya. output of 33. Nakajima's output of 11) for a neighboring pixel away, (Formula1:  $|x_n - x_{n-k}| > \varepsilon$ ,  $k = \{-N \dots N\}$ )*

*in view of the pixel of attention, ( $x_n$ ) from the two neighboring pixels raised with flags.*  
(Nakajima, [0034] " "1" is output from the AND circuits 12 when both of absolute values of differences between level values of combined pixels and the watched pixel are smaller than the reference level". (Fig1. If either  $|a-o| > \theta$  or  $|h-o| > \theta$ , flag raised for 2 pixels: a & h.))

**() Regarding Claim 3:**



3. *The signal processing apparatus as described in claim 1, wherein said signals are pixel values of pixels constituting an image.* (Fig1. [0028] "pixel value")

### **Conclusion**

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **MAX SHIKHMAN** whose telephone number is (571)270-1669. The examiner can normally be reached on **Monday-Friday 8:30AM-6:00PM EST**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571) 272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Max Shikhman/  
Examiner, Art Unit 2624  
4.19.2009

/Vikkram Bali/  
Supervisory Patent Examiner, Art Unit 2624